

WHAT IS CLAIMED IS:

1. An electrophotographic apparatus for reproducing a picture by expressing a gradation of the picture by use of halftone spots which are each formed by dot pictures within 5 a plurality of pixels, said electrophotographic apparatus comprising:

a picture reproducing engine for forming the dot pictures by attaching toner to virtual dot areas each within the pixel; and

10 an image processing unit for causing (i) growth of halftone spots of a first group in a first data range of input image data to increase a gradation of the dot pictures, and (ii) growth of halftone spots of a second group in a second data range of the input image data, which is adjacent to higher gradation 15 level side of said first data range to further increase the gradation of the dot pictures;

20 wherein the gradation of the dot pictures is simply increased by said image processing unit without decrease at a boundary between said first and second data ranges.

25 2. An electrophotographic apparatus according to claim 1, wherein a density of the halftone spots of said second data range is larger than a density of the halftone spots of said first data range.

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3. An electrophotographic apparatus according to
claim 2, wherein said image processing unit generates virtual
dots small enough to fail to form dot pictures of toner in halftone
spot areas other than said halftone spots of said first group
5 in said first data range of the input image data.

4. An electrophotographic apparatus according to
claim 2, wherein halftone spots of said second group start to
grow during the growth of halftone spots of said first group
10 in said first data range of the input image data.

5. An electrophotographic apparatus according to
claim 4, wherein the growth of halftone spots of said first
group stops during the growth of halftone spots of said second
15 group.

6. An image processing method for reproducing a
picture by expressing a gradation of the picture by use of
halftone spots which are each formed by dot pictures within
20 a plurality of pixels, said image processing method comprising
steps of:

growing halftone spots of a first group in a first data
range of input image data to increase a gradation of the dot
pictures;

25 growing halftone spots of a second group in a second data

range of the input image data, which is adjacent to higher gradation level side of said first data range to further increase the gradation of the dot pictures; and

simply increasing the gradation of the dot pictures

5 without decrease at a boundary between said first and second data ranges.

7. An image processing method according to claim 6, wherein a density of the halftone spots of said second data 10 range is larger than a density of the halftone spots of said first data range.

8. An image processing method according to claim 7, further comprising a step of generating virtual dots small enough 15 to fail to form dot pictures of toner in halftone spot areas other than said halftone spots of said first group in said first data range of the input image data.

9. An image processing method according to claim 7, 20 wherein halftone spots of said second group start to grow during the growth of halftone spots of said first group in said first data range of the input image data.

10. An image processing method according to claim 9, 25 wherein the growth of halftone spots of said first group stops

during the growth of halftone spots of said second group.

11. An image processing program which causes a computer to execute an image processing for reproducing a picture by 5 expressing a gradation of the picture by use of halftone spots which are each formed by dot pictures within a plurality of pixels, said image processing comprising:

a step of growing halftone spots of a first group in a first data range of input image data to increase a gradation 10 of the dot pictures;

a step of growing halftone spots of a second group in a second data range of the input image data, which is adjacent to higher gradation level side of said first data range to further increase the gradation of the dot pictures; and

a step of simply increasing the gradation of the dot pictures without decrease at a boundary between said first and second data ranges.

12. An image processing program according to claim 11, 20 wherein a density of the halftone spots of said second group is larger than a density of the halftone spots of said first group.

13. An image processing program according to claim 12, 25 wherein said image processing further comprises a step of

generating virtual dots small enough to fail to form dot pictures of toner in halftone spot areas other than said halftone spots of said first group in said first data range of the input image data.

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14. An image processing program according to claim 12, wherein halftone spots of said second group start to grow during the growth of halftone spots of said first group in said first data range of the input image data.

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15. An image processing program according to claim 14, wherein the growth of halftone spots of said first group stops during the growth of halftone spots of said second group.

16. An electrophotographic apparatus for reproducing a picture by expressing a gradation of the picture by use of halftone spots which are each formed by dot pictures within a plurality of pixels, said electrophotographic apparatus comprising:

20 a picture reproducing engine for forming the dot pictures by attaching toner to virtual dot areas each within the pixel; and

25 an image processing unit for causing (i) growth of halftone spots of a first group in a first data range of input image data to increase a gradation of the dot pictures, and (ii) growth

of halftone spots of a second group in a second data range of the input image data, which is adjacent to higher gradation level side of said first data range to further increase the gradation of the dot pictures;

5 wherein said image processing unit generates virtual dots small enough to fail to form dot pictures of toner in halftone spot areas other than said halftone spots of said first group in said first data range of the input image data.

10 17. An electrophotographic apparatus for reproducing a picture by expressing a gradation of the picture by use of halftone spots which are each formed by dot pictures within a plurality of pixels, said electrophotographic apparatus comprising:

15 a picture reproducing engine for forming the dot pictures by attaching toner to virtual dot areas each within the pixel; and

20 an image processing unit for causing (i) growth of halftone spots of a first group in a first data range of input image data to increase a gradation of the dot pictures, and (ii) growth of halftone spots of a second group in a second data range of the input image data, which is adjacent to higher gradation level side of said first data range to further increase the gradation of the dot pictures;

25 wherein halftone spots of said second group start to grow

during the growth of halftone spots of said first group in
said first data range of the input image data.